

This section was ranked by the user as 11 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 9.9 in the previous version to 7.13 in the current version.

The current score is based (in part) on:

- Inspections have found metal loss due to atmospheric corrosion over the past 15 years.
- Inspections have found problems with above ground pipe coatings that could not be fixed by routine maintenance
- The pressure/diameter of this section is substantially greater than the average of the system.
- The pipe is predominately located within business districts.

The prior score was based (in part) on:

- Inspections have found problems with above ground pipe coatings that could not be fixed by routine maintenance
- Leaks caused by atmospheric corrosion have required repair over the past 15 years.
- Inspections have found metal loss due to atmospheric corrosion over the past 15 years.
- The pipe is predominately located within business districts.
- Operator overrode ranking with this explanation:

Zoomerang survey rank is 11

The consequence score changed from 1.3 in the previous version to 1.475 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

q. **Section: Unprotected, Bare Steel**

Threat: Corrosion -> External Corrosion

Description: Entire System

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 20 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 9.26 in the previous version to 7.07 in the current version.

The current score is based (in part) on:

- Exposed pipe inspections indicate a corrosion problem.
- Confirmed corrosion leaks have occurred on this section.

The prior score was based (in part) on:

- Repaired leaks per service are increasing.
- Exposed pipe inspections indicate a corrosion problem.
- Confirmed corrosion leaks have occurred on this section.
- Operator overrode ranking with this explanation:

Use default SHRIMP ranking

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

r. **Section: High Pressure to High Pressure Stations**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure -> Specific Other Equipment Experiencing Failure

Description: High Pressure to High Pressure Station

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 27 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 4.03 in the previous version to 6.7 in the current version.

The current score is based (in part) on:

- The likelihood that a failure of this equipment will become a Grade 1 leak is high.
- The likelihood of this piece of equipment failing is low.
- The failing element of the equipment causes system pressure to exceed the MAOP.
- The size/capacity of the equipment is somewhat greater than other equipment in the system as a whole.

The prior score was based (in part) on:

- The likelihood of this piece of equipment failing is medium.
- The equipment is primarily within business districts.
- The impact on the utility and its customers if this equipment were to fail would be moderate.
- Operator override ranking with this explanation:

Zoomerang survey rank is 27

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

s. **Section: Inaccessible Valves**

Threat: Other Threats -> Other

Description: Paved Over, Dirt in B-Box

This section was ranked by the user as 21 in the previous version.

This section has been ranked by the user as 19 in the current version.

t. **Section: Inside Atmospheric Corrosion**

Threat: Corrosion -> Atmospheric Corrosion -> Atmospheric Corrosion

Description: Inside Service Pipe

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 17 in the previous version.

This section has been ranked by the user as 20 in the current version.

The consequence score changed from 1.15 in the previous version to 1 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

u. **Section: Outside Atmospheric Corrosion**

Threat: Corrosion -> Atmospheric Corrosion -> Atmospheric Corrosion

Description: Outside Service Riser Pipe

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 7 in the previous version.

This section has been ranked by the user as 20 in the current version.

The consequence score changed from 1.15 in the previous version to 1 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

v. **Section: Unprotected, Coated Steel**

Threat: Corrosion -> External Corrosion

Description: Entire System

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 39 in the previous version.

The user ranking was removed in the current version.

The consequence score changed from 1 in the previous version to 1.3 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

w. **Section: Medium Pressure Vaults**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure -> Specific Other Equipment Experiencing Failure

Description: High Pressure to Medium Pressure Vaults

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 19 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 3.53 in the previous version to 6.42 in the current version.

The current score is based (in part) on:

- The likelihood that a failure of this equipment will become a Grade 1 leak is high.
- The likelihood of this piece of equipment failing is low.
- The failing element of the equipment causes system pressure to exceed the MAOP.
- The size/capacity of the equipment is somewhat greater than other equipment in the system as a whole.

The prior score was based (in part) on:

- The likelihood of this piece of equipment failing is medium.
- The impact on the utility and its customers if this equipment were to fail would be moderate.
- Operator overrode ranking with this explanation:

Zoomerang survey rank is 19

The consequence score changed from 1.05 in the previous version to 1.15 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

x. **Section: Fittings**

Threat: Material, Weld or Joint Failure -> Manufacturing Defects

Description: Mechanical Joint

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 34 in the previous version.

The user ranking was removed in the current version.

The consequence score changed from 1.15 in the previous version to 1.1 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.005 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

y. **Section: Security Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: Slam Shut Security Valves

This section is new in this version of the plan.

z. **Section: Other Metal**

Threat: Corrosion -> External Corrosion

Description: Entire System

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 17 in the previous version.

The user ranking was removed in the current version.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

aa. **Section: Known Material**

Threat: Material, Weld or Joint Failure -> Known Materials

Description: Compression Couplings for PE Pipe

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 48 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 3.43 in the previous version to 5.58 in the current version.

The current score is based (in part) on:

- Failures in this section occur more than once per year.

The prior score was based (in part) on:

- Failures in this section occur once or more within 5 year period.
- A failure of this section could result in moderate disruption of service.
- Operator overrode ranking with this explanation:

Use default SHRIMP rank

The consequence score changed from 1.05 in the previous version to 1 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.005 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

ab. **Section: Remote Oper Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: All Remote Op Valves

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 53 in the previous version.

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The user ranking was removed in the current version.

The probability score changed from 1.5 in the previous version to 4.78 in the current version.

The current score is based (in part) on:

- The likelihood of this valve failing is low.
- The likelihood that a failure of this equipment will become a Grade 1 leak is high.
- The size/capacity of the equipment is substantially greater than other equipment in the system as a whole.
- The equipment is primarily within business districts.

The prior score was based (in part) on:

- The likelihood of this valve failing is low.
- The size/capacity of the equipment is substantially greater than other equipment in the system as a whole.
- The equipment is primarily within business districts.
- The impact on the utility and its customers if this equipment were to fail would be high.
- Operator overrode ranking with this explanation:

likelihood of failure is low

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

ac. **Section: Cathodic Protected, Coated Steel**

Threat: Corrosion -> External Corrosion

Description: Entire System

The section ranking has changed from the previous version of the plan.

The probability score changed from 0 in the previous version to 4.32 in the current version.

The current score is based (in part) on:

- Repaired leaks per mile of mains are increasing.
- Cathodic protection test point readings that meet or exceed acceptable cathodic protection criteria; at least 75% of readings exceed -.85 v.
- Stray currents are creating problems.
- Confirmed corrosion leaks have occurred on this section.

The prior score was based (in part) on:

- Reason could not be determined.

The consequence score changed from 1 in the previous version to 1.15 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

ad. **Section: Network Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: All Network Valves

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 52 in the previous version.

The user ranking was removed in the current version.

The probability score changed from 1.34 in the previous version to 3.79 in the current version.

The current score is based (in part) on:

- The likelihood of this valve failing is low.
- The likelihood that a failure of this equipment will become a Grade 1 leak is high.
- The equipment is primarily within business districts.

The prior score was based (in part) on:

- The likelihood of this valve failing is low.
- The equipment is primarily within business districts.
- The size/capacity of the equipment is somewhat greater than other equipment in the system as a whole.
- The impact on the utility and its customers if this equipment were to fail would be moderate.
- Operator override ranking with this explanation:

likelihood of failure is low

The consequence score changed from 1.3 in the previous version to 1.15 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

ae. **Section: Other Outside Force Damage - Crossbores**

Threat: Other Threats -> Other

Description: Gas Pipe Bored Through Sewer Lateral

This section was ranked by the user as 30 in the previous version.

This section has been ranked by the user as 31 in the current version.

af. **Section: Gas Operations Distribution Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: Distribution Valves Located Inside Valve Basins

This section is new in this version of the plan.

ag. **Section: Kerotest Valve**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: Kerotest Valve (Kerotest, Prior to Mid 1980's)

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 45 in the previous version.

This section has been ranked by the user as 33 in the current version.

The probability score changed from 1.03 in the previous version to 3.3 in the current version.

The current score is based (in part) on:

- The likelihood of this valve failing is medium.
- Operator override ranking with this explanation:

Ranked on threat lower due to 2" Kerotest Valve threat being ranked one higher.

The prior score was based (in part) on:

- The likelihood of this valve failing is low.
- Operator override ranking with this explanation:

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

ah. **Section: Excavation Damage - Critical Facilities**

Threat: Other Threats -> Other

Description: Excavation near HP Pipelines, >=16" MP Pipelines, Vaults, Remote Operated Valves, and Current Rectifiers

This section is new in this version of the plan.

ai. **Section: Incorrect Operations - Non-Approved Material**

Threat: Other Threats -> Other

Description: Installation of Non-Approved Materials

This section was ranked by the user as 10 in the previous version.

This section has been ranked by the user as 35 in the current version.

aj. **Section: Excavation Damage - Inactive Services**

Threat: Other Threats -> Other

Description: Service Pipes Designated as Inactive

This section is new in this version of the plan.

ak. **Section: Meters/Shutoffs Inaccessible**

Threat: Other Threats -> Other

Description: No Access to Meter or Shutoff

This section was ranked by the user as 26 in the previous version.

This section has been ranked by the user as 37 in the current version.

al. **Section: Other - Soft Closed Accounts**

Threat: Other Threats -> Other

Description: Supply to Vacant Property Remaining Active

This section is new in this version of the plan.

am. **Section: Incorrect Operations - Improper Odorization**

Threat: Other Threats -> Other

Description: Too Little or Much Mercaptin

This section was ranked by the user as 43 in the previous version.

This section has been ranked by the user as 39 in the current version.

an. **Section: Corrosion - Cased Pipelines**

Threat: Other Threats -> Other

Description: Cathodic Protected Steel Pipelines inside Metallic Casings

This section was ranked by the user as 49 in the previous version.

This section has been ranked by the user as 40 in the current version.

ao. **Section: Distribution Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: Distribution Valves Not Located in Basins

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 51 in the previous version.

This section has been ranked by the user as 41 in the current version.

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

ap. **Section: Service Valves**

Threat: Equipment Malfunction -> Valves Experiencing Failure -> Specific Valves Experiencing Failure

Description: All Service Valves

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 50 in the previous version.

This section has been ranked by the user as 42 in the current version.

The leak cause factor changed from 1.033 in the previous version to 1.015 in the current version. This is due to changes in leak, failure and damage information.

aq. **Section: Other Outside Force - Occupant Use**

Threat: Other Threats -> Other

Description: Unauthorized Turn-on By Customer

This section is new in this version of the plan.

ar. **Section: PEOPLES GAS**

Threat: Corrosion -> Internal Corrosion

Description: Entire System

The section ranking has changed from the previous version of the plan.

This section was ranked by the user as 48 in the previous version.

This section has been ranked by the user as 44 in the current version.

The consequence score changed from 1.15 in the previous version to 1 in the current version. This is due to changes in operator responses to the consequence questions.

The leak cause factor changed from 1.218 in the previous version to 1.104 in the current version. This is due to changes in leak, failure and damage information.

as. **Section: Failing Equipment**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure

Description: Heaters

This section is new in this version of the plan.

at. **Section: Regulator Station**

Threat: Corrosion -> Atmospheric Corrosion -> Atmospheric Corrosion

Description: Regulator Station Pipe

This section was in the previous version of the plan and has been removed.

au. **Section: Mains in Shafts & Tunnels**

Threat: Corrosion -> Atmospheric Corrosion -> Atmospheric Corrosion

Description: Exposed Mains Located in Shafts & Tunnels

This section was in the previous version of the plan and has been removed.

av. **Section: Other**

Threat: Corrosion -> Atmospheric Corrosion -> Atmospheric Corrosion

Description: Vaulted Sidewalks, Crawl Spaces, Steel Risers on Plastic Services

This section was in the previous version of the plan and has been removed.

aw. **Section: Equipment Failure on Service Pipe in Downtown Business District**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure -> Specific Other Equipment Experiencing Failure

Description: Downtown Services (Various, Various, Various)

This section was in the previous version of the plan and has been removed.

ax. **Section: Equip Failure on Main Pipe Inside Regulator Vault**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure -> Specific Other Equipment Experiencing Failure

Description: Mains in Regulator Vault (Various, Various, Various)

This section was in the previous version of the plan and has been removed.

ay. **Section: Equip Failure on HP CP Steel Main & Services**

Threat: Equipment Malfunction -> Other Equipment Experiencing Failure -> Specific Other Equipment Experiencing Failure

Description: High Pressure CP Mains & Services (Various, Various, Various)

This section was in the previous version of the plan and has been removed.

az. **Section: Service Pipe**

Threat: Material, Weld or Joint Failure -> Manufacturing Defects

Description: Service

This section was in the previous version of the plan and has been removed.

ba. **Section: HP CP Steel**

Threat: Material, Weld or Joint Failure -> Manufacturing Defects

Description: Main or Service

This section was in the previous version of the plan and has been removed.

bb. **Section: Main Pipe Downtown**

Threat: Material, Weld or Joint Failure -> Manufacturing Defects

Description: Downtown Business District

This section was in the previous version of the plan and has been removed.

bc. **Section: Other**

Threat: Material, Weld or Joint Failure -> Manufacturing Defects

Description: Age of Piping

This section was in the previous version of the plan and has been removed.

bd. **Section: Excavation Damage on Service Pipe**

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Service Pipe

This section was in the previous version of the plan and has been removed.

be. **Section: Excavation Damage on Main Pipe**

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Main Pipe

This section was in the previous version of the plan and has been removed.

bf. Section: Service Pipe Downtown

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Service Pipe in the Downtown Business District

This section was in the previous version of the plan and has been removed.

bg. Section: Main Pipe Downtown

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Main Pipe in the Downtown Business District

This section was in the previous version of the plan and has been removed.

bh. Section: Excavation Damage - Other

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Foreign Object Damage During Backfill, Not Potholing, Lamp Stub Services, Incorrect Locating (Operator Error & Incorrect Records), Plastic Services with no Tracer Wire

This section was in the previous version of the plan and has been removed.

bi. Section: Main Pipe Around Regulator Station

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: Main Pipe Around Regulator Station

This section was in the previous version of the plan and has been removed.

bj. Section: High Pressure CP Steel Main or Service Pipe

Threat: Excavation Damage -> Concentrated Damages -> Concentrated Damages

Description: High Pressure Cathodically Protected Steel Mains or Services

This section was in the previous version of the plan and has been removed.

bk. Section: Main Pipe Downtown

Threat: Natural Forces -> Concentrated Area

Description: Mains in Downtown Business District

This section was in the previous version of the plan and has been removed.

bl. Section: Service Pipe Downtown

Threat: Natural Forces -> Concentrated Area

Description: Services in Downtown Business District

This section was in the previous version of the plan and has been removed.

bm. Section: Mains Around Regulator Station

Threat: Natural Forces -> Concentrated Area

Description: Mains Around Regulator Station

This section was in the previous version of the plan and has been removed.

bn. Section: Other

Threat: Natural Forces -> Concentrated Area

Description: Sink Holes, Frost Heave, Water in Regulators

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bo. **Section: High Pressure CP Steel Mains or Services**

Threat: Natural Forces -> Concentrated Area

Description: HP Cath. Protected Steel Main & Service Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bp. **Section: Service Pipe Downtown**

Threat: Other Outside Forces -> Other Outside Forces

Description: Services in Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bq. **Section: Main Pipe Downtown**

Threat: Other Outside Forces -> Other Outside Forces

Description: Mains in Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

br. **Section: Other**

Threat: Other Outside Forces -> Other Outside Forces

Description: Vehicle Hits, Meter & Regulator Theft, Damage During Remodeling, Items Falling on Meters & Regulators, Ice Buildup on Regulators

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bs. **Section: Main Pipe Around Regulator Station**

Threat: Other Outside Forces -> Other Outside Forces

Description: Main Pipe Around Regulator Station

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bt. **Section: High Pressure CP Steel Mains & Services**

Threat: Other Outside Forces -> Other Outside Forces

Description: HP Cathodically Protected Steel Mains & Services

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bu. **Section: Other - Mains in Downtown**

Threat: Other Threats -> Other

Description: Main Pipe in the Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bv. **Section: Other - Services in Downtown**

Threat: Other Threats -> Other

Description: Service Pipe in the Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bw. **Section: Other - High Pressure CP Steel Mains & Services**

Threat: Other Threats -> Other

Description: HP Cathodically Protected Steel Main & Service Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bx. **Section: Other - Main Pipe Around Regulator Station**

Threat: Other Threats -> Other

Description: Main Pipe Around Regulator Station

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

by. **Section: Other - Other (Corroded/Loosened Bolts, Dresser Couplings, Barrels Rotted Out**

Threat: Other Threats -> Other

Description: Bolts on Mechanical Joints, Dresser Couplings Loose, Barrels Rotted Out

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

bz. **Section: Corrosion on Service Pipe**

Threat: Other Threats -> Other

Description: Corrosion on Service Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

ca. **Section: Corrosion on Main Pipe**

Threat: Other Threats -> Other

Description: Corrosion on Main Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cb. **Section: Corrosion on Service Pipe Downtown**

Threat: Other Threats -> Other

Description: Service Pipe Corrosion in Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cc. **Section: Corrosion on Main Pipe Downtown**

Threat: Other Threats -> Other

Description: Main Pipe Corrosion in Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cd. **Section: Incorrect Operations - Service Pipe**

Threat: Other Threats -> Other

Description: Incorrect Operations - Service Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

ce. **Section: Corrosion Other (Stray Current, Bare Steel Lamp Stubs)**

Threat: Other Threats -> Other

Description: Stray Current from Customer, Trains; Lamp Stubs

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cf. **Section: Corrosion - Main Pipe Around Regulator Station**

Threat: Other Threats -> Other

Description: Corrosion on Main Pipe Around Regulator Station

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cg. **Section: Incorrect Operations - Main Pipe**

Threat: Other Threats -> Other

Description: Incorrect Operations on Main Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

ch. **Section: Incorrect Operations on Service Pipe Downtown**

Threat: Other Threats -> Other

Description: Service Pipe in the Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

ci. **Section: Corrosion On High Pressure CP Steel Mains & Services**

Threat: Other Threats -> Other

Description: Corrosion on HP Cathodically Protected Steel Mains & Services

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cj. **Section: Incorrect Operations on Main Pipe Downtown**

Threat: Other Threats -> Other

Description: Main Pipe in the Downtown Business District

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

ck. **Section: Incorrect Operations - Other**

Threat: Other Threats -> Other

Description: Constab Fittings not Chamfered Correctly, Cold Coiled Pipe not Seating Properly

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cl. **Section: Incorrect Operations - Main Pipe Around Regulator Station**

Threat: Other Threats -> Other

Description: Main Pipe Around Regulator Station

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cm. **Section: Incorrect Operations on High Pressure CP Steel Mains & Services**

Threat: Other Threats -> Other

Description: HP Cathodically Protected Steel Mains & Services

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

cn. **Section: Other - Main Pipe**

Threat: Other Threats -> Other

Description: Other Threats to Main Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

co. **Section: Other - Service Pipe**

Threat: Other Threats -> Other

Description: Other Threats to Service Pipe

Threat Assessment Incomplete

This section was in the previous version of the plan and has been removed.

11.5.3. CHANGES TO RISK BASED ADDITIONAL ACTIONS

Overview

The following lists the risk based additional/accelerated actions that were added or removed for the risk sections in this version of the plan.

Some risk sections may have been added or removed. These are described in [Section 11.5.1, "CHANGES TO THREAT ASSESSMENT"](#).

a. **Section: City of Chicago, Water**

- conduct additional leak surveys.

^^^ Choice Added ^^^

- conduct enhanced awareness education programs following the guidelines of the Supplemental Frequency and Activity in API RP 1162 Public Awareness Programs for Pipeline Operators incorporated by reference in 49 CFR Part 192.

^^^ Choice Added ^^^

- improve accuracy of line marking.

^^^ Choice Added ^^^

- inspect for facility support/protection.
^^^ Choice Added ^^^
- monitor backfill operation.
^^^ Choice Added ^^^
- monitor/audit excavation activity.
^^^ Choice Added ^^^
- provide additional excavation damage prevention training.
^^^ Choice Added ^^^
- recruit support of public safety officials.
^^^ Choice Added ^^^
- discuss and request regulatory intervention from the appropriate agency to address specific violations by a third party (e.g., excavators, property owners, other facility operators) of state damage prevention laws.
^^^ Choice Added ^^^
- perform leak surveys after blasting (required).
^^^ Choice Removed ^^^
- use warning tape where feasible.
^^^ Choice Removed ^^^

b. Section: Benchmark Construction

- conduct additional leak surveys.
^^^ Choice Added ^^^
- conduct enhanced awareness education programs following the guidelines of the Supplemental Frequency and Activity in API RP 1162 Public Awareness Programs for Pipeline Operators incorporated by reference in 49 CFR Part 192.
^^^ Choice Added ^^^
- inspect for facility support/protection.
^^^ Choice Added ^^^
- monitor backfill operation.
^^^ Choice Added ^^^
- monitor/audit excavation activity.
^^^ Choice Added ^^^
- provide additional excavation damage prevention training.
^^^ Choice Added ^^^
- recruit support of public safety officials.
^^^ Choice Added ^^^
- discuss and request regulatory intervention from the appropriate agency to address specific violations by a third party (e.g., excavators, property owners, other facility operators) of state damage prevention laws.
^^^ Choice Added ^^^
- perform leak surveys after blasting (required).
^^^ Choice Removed ^^^
- use warning tape where feasible.

^^^ Choice Removed ^^^

c. Section: Joel Kennedy Construction

- conduct additional leak surveys.

^^^ Choice Added ^^^

- conduct enhanced awareness education programs following the guidelines of the Supplemental Frequency and Activity in API RP 1162 Public Awareness Programs for Pipeline Operators incorporated by reference in 49 CFR Part 192.

^^^ Choice Added ^^^

- improve accuracy of line marking.

^^^ Choice Added ^^^

- inspect for facility support/protection.

^^^ Choice Added ^^^

- monitor backfill operation.

^^^ Choice Added ^^^

- monitor/audit excavation activity.

^^^ Choice Added ^^^

- provide additional excavation damage prevention training.

^^^ Choice Added ^^^

- recruit support of public safety officials.

^^^ Choice Added ^^^

- discuss and request regulatory intervention from the appropriate agency to address specific violations by a third party (e.g., excavators, property owners, other facility operators) of state damage prevention laws.

^^^ Choice Added ^^^

d. Section: Bell Joints & Mechanical Joints

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- Accelerated Main Replacement Project to eliminate Cast and Ductile Iron Mains.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

e. Section: Peoples Gas Contractors

- conduct additional leak surveys.

^^^ Choice Added ^^^

- conduct enhanced awareness education programs following the guidelines of the Supplemental Frequency and Activity in API RP 1162 Public Awareness Programs for Pipeline Operators incorporated by reference in 49 CFR Part 192.

^^^ Choice Added ^^^

- expand equipment testing, calibration, upgrade.

^^^ Choice Added ^^^

- improve accuracy of line marking.

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^^^ Choice Added ^^^

- inspect for facility support/protection.

^^^ Choice Added ^^^

- monitor backfill operation.

^^^ Choice Added ^^^

- monitor/audit excavation activity.

^^^ Choice Added ^^^

- recruit support of public safety officials.

^^^ Choice Added ^^^

- re-evaluate contractor.

^^^ Choice Added ^^^

f. Section: 6" Cast Iron Mains

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- Retirement Program to replace all Cast/Ductile Iron with modern materials (HDPE Plastic/CP Steel).

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

g. Section: Entire System

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- Retirement Program to replace all Cast/Ductile Iron with modern materials (HDPE Plastic/CP Steel).

^^^ Choice Added ^^^

- replace 0 Feet of pipe in high-risk areas in this section of the distribution system. Replacement will be done using pipe or materials that will reduce or mitigate the risk of damage from natural forces.

^^^ Choice Removed ^^^

h. Section: Cast, Ductile, Wrought Iron (larger than 8")

- Accelerated Main Replacement Program to replace all Cast/Ductile Iron with modern materials. (HDPE Plastic and CP Steel)

^^^ Choice Added ^^^

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

i. Section: Other Outside Force Damage - Services

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential

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DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

j. Section: Cast, Ductile, Wrought Iron (8" or smaller)

- Accelerated Main Replacement Program to replace all Cast/Ductile Iron with modern materials. (HDPE Plastic and CP Steel)

^^^ Choice Added ^^^

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

k. Section: Low Pressure Vaults

- perform inspections and maintenance on an accelerated frequency of Monthly on this portion of the distribution system.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program to eliminate the Low Pressure side of the distribution system, and in turn, all LP vaults.

^^^ Choice Added ^^^

l. Section: Other Outside Force Damage - Mains

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

m. Section: Peoples Gas

- expand equipment testing, calibration, upgrade.

^^^ Choice Added ^^^

- improve accuracy of line marking.

^^^ Choice Added ^^^

- inspect for facility support/protection.

^^^ Choice Added ^^^

- monitor backfill operation.

^^^ Choice Added ^^^

- monitor/audit excavation activity.

^^^ Choice Added ^^^

- provide additional excavation damage prevention training.

^^^ Choice Added ^^^

- review map availability.

^^^ Choice Added ^^^

- perform leak surveys after blasting (required).

^^^ Choice Removed ^^^

- use warning tape where feasible.

^^^ Choice Removed ^^^

n. Section: Service Pipe

- monitor or trend material failures.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program to renew clear plastic services with modern materials (CP Steel/HDPE Plastic)

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

o. Section: Gate Stations

- perform inspections and maintenance on an accelerated frequency of Monthly on this portion of the distribution system.

^^^ Choice Added ^^^

- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

p. Section: Bridges and Tunnels

- The relative risk posed by this threat on this section of PEOPLES GAS are adequately addressed by current inspection and maintenance. No additional actions are required. The following explanation was provided:

Visual and Leak Survey Inspections of the pipe and all supporting structures are completed quarterly, with a more comprehensive inspection completed every 3 years. Any required work is immediately brought to the attention of district management.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

q. Section: Unprotected, Bare Steel

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program to renew bare steel services with modern materials (CP steel/HDPE PLastic)

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

r. Section: High Pressure to High Pressure Stations

- perform inspections and maintenance on an accelerated frequency of Monthly on this portion of the distribution system.

^^^ Choice Added ^^^

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- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

s. **Section: Inaccessible Valves**

- Chosen AAs Have Not Changed.

t. **Section: Inside Atmospheric Corrosion**

- Inside Safety Inspections - performed every three years not to exceed 51 months.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program to limit inside company owned piping. All inside meters to be moved outside when service is renewed. Any meters left inside require manager authorization.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

u. **Section: Outside Atmospheric Corrosion**

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

v. **Section: Unprotected, Coated Steel**

- Additional Leak Surveys: Business Districts - annually, not to exceed 15 months. Loop - 3 times annually. MP Residential DI/CI mains - annually. MP LP Residential - every 5 years not to exceed 63 months. Non CP Steel - every 3 years not to exceed 39 months. High Pressure - 4 times annually.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program to renew non CP Steel services with modern materials (CP Steel/HDPE Plastic)

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

w. **Section: Medium Pressure Vaults**

- perform inspections and maintenance on an accelerated frequency of Monthly on this portion of the distribution system.

^^^ Choice Added ^^^

x. **Section: Fittings**

- monitor or trend material failures.

^^^ Choice Added ^^^

- repair or replace problem materials.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

y. **Section: Security Valves**

- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- repair or replace problem materials.

^^^ Choice Added ^^^

z. **Section: Other Metal**

- Accelerated Main Replacement Program to renew copper services with modern materials (CP Steel/HDPE Plastic)

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

aa. **Section: Known Material**

- revise construction procedures.

^^^ Choice Added ^^^

- revise materials specifications.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ab. **Section: Remote Oper Valves**

- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- repair or replace problem materials.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ac. **Section: Cathodic Protected, Coated Steel**

- correct cathodic protection deficiencies by locating and eliminating shorts (including shorted casings) in this portion of the distribution system.

^^^ Choice Added ^^^

- install additional test stations and evaluate in this portion of the distribution system

^^^ Choice Added ^^^

- correct cathodic protection deficiencies by repairing or replacing or adding a rectifier or groundbed to the existing cathodic protection system in this portion of the distribution system.

^^^ Choice Added ^^^

- correct cathodic protection deficiencies by replacing anode beds or add anodes section-wide in this portion of the distribution system.

^^^ Choice Added ^^^

- correct cathodic protection deficiencies by installing supplemental anodes in problem areas in this portion of the distribution system.

^^^ Choice Added ^^^

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- correct cathodic protection deficiencies by mitigating interference problems in problem areas in this portion of the distribution system.

^^^ Choice Added ^^^

- correct cathodic protection deficiencies by isolating CP systems and reevaluating problems in this portion of the distribution system.

^^^ Choice Added ^^^

- correct cathodic protection deficiencies by bonding CP systems together and reevaluating problems in this portion of the distribution system.

^^^ Choice Added ^^^

- For insulated corrosion protected services, remediation threshold has been increased from -.85V to -.95V.

^^^ Choice Added ^^^

- Perform any required remediation on CP steel facilities within 12 months, instead of the 15 mandated by regulation.

^^^ Choice Added ^^^

- Monitor Rectifier Status, Voltage, and Current Outputs every eight days, instead of two months as required by regulations.

^^^ Choice Added ^^^

- Never Reviewed.

^^^ Choice Removed ^^^

ad. **Section: Network Valves**

- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- repair or replace problem materials.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ae. **Section: Other Outside Force Damage - Crossbores**

- Monitor or Trend these Failures.

^^^ Choice Added ^^^

- Pre and Post camera work for main installations using any trenchless technologies. Daylighting all crossings. Public outreach program to notify plumbers and homeowners of danger of rodding clogged sewers.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

af. **Section: Gas Operations Distribution Valves**

- repair or replace problem materials.

^^^ Choice Added ^^^

ag. **Section: Kerotest Valve**

- repair problem equipment and/or change settings.

^^^ Choice Added ^^^

- repair or replace problem materials.

^^^ Choice Removed ^^^

ah. **Section: Excavation Damage - Critical Facilities**

- Monitor or Trend these Failures.

^^^ Choice Added ^^^

- All excavation activities near an identified critical facility are monitored on-site by company personnel, from initial excavation through final backfill. A daily email is generated by System Integrity Engineers detailing each critical excavation site, including the location, excavator, Dig #, Type of Work, and Facility Type and Size. Shut Down and Contingency Plans are developed for each proposed critical excavation in the event the facility is damaged. All boring near critical facilities is monitored.

^^^ Choice Added ^^^

ai. **Section: Incorrect Operations - Non-Approved Material**

- Chosen AAs Have Not Changed.

aj. **Section: Excavation Damage - Inactive Services**

- Monitor or Trend these Failures.

^^^ Choice Added ^^^

- Physical disconnects: 200 planned for 2015 and 250 planned for 2016. Alignment with AMRP retirements has also been considered. TEG Standard 1050 - Facility Deactivation and Abandonment was also established.

^^^ Choice Added ^^^

ak. **Section: Meters/Shutoffs Inaccessible**

- Accelerated Main Replacement Program to address inside meters. All inside meters to be moved outside when service is renewed. Any meters left inside require manager authorization.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

al. **Section: Other - Soft Closed Accounts**

- Develop procedure/directive to address soft closed accounts. Disconnect any soft closed account that has a pending ISI.

^^^ Choice Added ^^^

am. **Section: Incorrect Operations - Improper Odorization**

- Monitor or Trend these Failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

an. **Section: Corrosion - Cased Pipelines**

- Monitor or Trend these Failures.

^^^ Choice Added ^^^

- All known casings are inspected annually. Casings requiring remediation are given to Engineering design and receive high importance due to the relative difficulty in repairs. Bi-Weekly status meetings between Corrosion Group and Engineering Design on pending casing remediation projects.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ao. **Section: Distribution Valves**

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- repair or replace problem materials.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ap. **Section: Service Valves**

- repair or replace problem materials.

^^^ Choice Added ^^^

- Accelerated Main Replacement Program - All new service line installations require an excess flow valve, and in almost all instances, the meter and shutoff is installed on the outside of the building, thereby eliminating the need for a buried valve.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

aq. **Section: Other Outside Force - Occupant Use**

- Any accounts that are currently inactive but showing usage are immediately ordered an additional disconnect request. If the meter is outside, or if there no active accounts at the premise, the disconnect order is completed within 5 days. Otherwise, the order is completed within 30 days, and all affected customers are notified of the pending disconnect. Consecutive Occupant Use Disconnect orders for the same address are issued a Distribution Cut-off (a physical disconnection from gas service.)

^^^ Choice Added ^^^

ar. **Section: PEOPLES GAS**

- The relative risk posed by this threat on this section of PEOPLES GAS are adequately addressed by current inspection and maintenance. No additional actions are required. The following explanation was provided:

Relative risk for this threat is very low.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

as. **Section: Failing Equipment**

- The relative risk posed by this threat on this section of PEOPLES GAS are adequately addressed by current inspection and maintenance. No additional actions are required. The following explanation was provided:

Relative risk for this threat is very low.

^^^ Choice Added ^^^

11.5.4. CHANGES TO RISK BASED PERFORMANCE MEASURES

Overview

Description of the changes reported in this section.

The following lists the risk based performance measures that were added or removed for the risk sections in this version of the plan.

Some risk sections may have been added or removed. These are described in [Section 11.5.1, "CHANGES TO THREAT ASSESSMENT"](#).

a. **Section: City of Chicago, Water**

- Record the number of hits to gas facilities per 1000 tickets caused by the City of Chicago Water Department.

^^^ Choice Added ^^^

- Record the number of hits to gas facilities per 1000 tickets caused by Joel Kennedy Construction.

^^^ Choice Removed ^^^

b. Section: Benchmark Construction

- Record the number of hits to gas facilities per 1000 tickets caused by Benchmark Construction.

^^^ Choice Added ^^^

- Record the number of hits to gas facilities per 1000 tickets caused by Joel Kennedy Construction.

^^^ Choice Removed ^^^

c. Section: Joel Kennedy Construction

- Record the number of hits to gas facilities per 1000 tickets caused by Joel Kennedy Construction.

^^^ Choice Added ^^^

d. Section: Bell Joints & Mechanical Joints

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

e. Section: Peoples Gas Contractors

- track the frequency of these failures per 1000 tickets.

^^^ Choice Added ^^^

f. Section: 6" Cast Iron Mains

- track the number of leaks or failures due to natural forces repaired each year per mile of main (and/or per service) in the 6" Cast Iron Mains.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

g. Section: Entire System

- track the number of leaks or failures due to natural forces repaired each year per mile of main (and/or per service) in the Entire System.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

h. Section: Cast, Ductile, Wrought Iron (larger than 8")

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Cast, Ductile, Wrought Iron (larger than 8").

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

i. Section: Other Outside Force Damage - Services

- Chosen PMs Have Not Changed.

j. Section: Cast, Ductile, Wrought Iron (8" or smaller)

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Cast, Ductile, Wrought Iron (8" or smaller).

- None chosen.

^^^ Choice Removed ^^^

k. Section: Low Pressure Vaults

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

l. Section: Other Outside Force Damage - Mains

- Chosen PMs Have Not Changed.

m. Section: Peoples Gas

- track the frequency of these failures per 1000 tickets.

^^^ Choice Added ^^^

- Record the number of hits to gas facilities per 1000 tickets caused by Joel Kennedy Construction.

^^^ Choice Removed ^^^

n. Section: Service Pipe

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

o. Section: Gate Stations

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

p. Section: Bridges and Tunnels

- The relative risk posed by this threat on this section of PEOPLES GAS does not warrant additional actions. Since no additional actions are called for there is no need for action-specific performance measures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

q. Section: Unprotected, Bare Steel

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Unprotected, Bare Steel.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

r. Section: High Pressure to High Pressure Stations

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

s. Section: Inaccessible Valves

- Chosen PMs Have Not Changed.

t. Section: Inside Atmospheric Corrosion

- Track the number of Inside Safety Inspections in which pipe condition was noted as poor due to corrosion.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

u. Section: Outside Atmospheric Corrosion

- track the frequency of leaks or failures due to atmospheric corrosion repaired each year per mile of main (and/or per service) in the Outside Atmospheric Corrosion.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

v. Section: Unprotected, Coated Steel

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Unprotected, Coated Steel.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

w. Section: Medium Pressure Vaults

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

x. Section: Fittings

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

y. Section: Security Valves

- track the frequency of these failures.

^^^ Choice Added ^^^

z. Section: Other Metal

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Other Metal.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

aa. **Section: Known Material**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ab. **Section: Remote Oper Valves**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ac. **Section: Cathodic Protected, Coated Steel**

- track the number of leaks caused by external corrosion per mile of main and per 1000 service lines on the Cathodic Protected, Coated Steel.

^^^ Choice Added ^^^

- Never Reviewed.

^^^ Choice Removed ^^^

ad. **Section: Network Valves**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ae. **Section: Other Outside Force Damage - Crossbores**

- Track the number of Crossbore Inspections completed and Crossbores found per year.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

af. **Section: Gas Operations Distribution Valves**

- track the frequency of these failures.

^^^ Choice Added ^^^

ag. **Section: Kerotest Valve**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ah. **Section: Excavation Damage - Critical Facilities**

- track the frequency of these failures.

ai. **Section: Incorrect Operations - Non-Approved Material**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

aj. **Section: Excavation Damage - Inactive Services**

- Record the number of inactive services (over 3 years) that are cut off from their supply of gas and retired.

^^^ Choice Added ^^^

ak. **Section: Meters/Shutoffs Inaccessible**

- Record the number of inside and outside meters.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

al. **Section: Other - Soft Closed Accounts**

- track the frequency of these failures.

^^^ Choice Added ^^^

am. **Section: Incorrect Operations - Improper Odorization**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

an. **Section: Corrosion - Cased Pipelines**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ao. **Section: Distribution Valves**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

ap. **Section: Service Valves**

- track the frequency of these failures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

aq. **Section: Other Outside Force - Occupant Use**

- track the frequency of these failures.

^^^ Choice Added ^^^

ar. **Section: PEOPLES GAS**

- The relative risk posed by this threat on this section of PEOPLES GAS does not warrant additional actions. Since no additional actions are called for there is no need for action-specific performance measures.

^^^ Choice Added ^^^

- None chosen.

^^^ Choice Removed ^^^

as. **Section: Failing Equipment**

- The relative risk posed by this threat on this section of PEOPLES GAS does not warrant additional actions. Since no additional actions are called for there is no need for action-specific performance measures.

^^^ Choice Added ^^^

11.5.5. CHANGES TO LIST OF ANSWERS FROM SHRIMP™ INTERVIEWS**Overview**

Description of the changes reported in this section.

The following lists the changes in interview responses entered during the threat assessments.

Corrosion Threat

- **Corrosion (CORR) (PEOPLES GAS - Entire System)**

- General System Description (EC101)

Data Source:

2014 PHMSA Annual Report, compiled from Service and Main Facility WAM Reports

Your Choice (weight: 0) --

Table 11.61. Material

	Mains	Services
Plastic	1602.707	454149
Unprotected, Bare	0.000	5227
Cathodically Protected, Bare	0.000	0
Unprotected, Coated	0.338	177
Cathodically Protected, Coated	1129.346	42591
Cast Iron, Wrought Iron	1360.874	72
Ductile Iron	233.980	275
Copper	0.000	13228
Other(1)	0.000	0
Other(2)	0.000	0

<<< Choice Changed From >>> --

Table 11.62. Material

	Mains	Services
Plastic	1050.927	439929
Unprotected, Bare	0.000	6295
Cathodically Protected, Bare	0.000	0
Unprotected, Coated	0.488	182
Cathodically Protected, Coated	1263.279	51683
Cast Iron, Wrought Iron	1558.972	78
Ductile Iron	285.746	366
Copper	0.018	17444
Other(1)	0.000	265

Other(2)	0.000	0
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◦ Mains By Size (EC101sm)

Data Source:

2014 PHMSA Annual Report, compiled from Service and Main Facility WAM Reports

Your Choice (weight: 0) --

Table 11.63. Material

	Unknown	2" or less	Over 2" thru 4"	Over 4" thru 8"	Over 8" thru 12"	Over 12"	Total
PVC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PE	0.000	928.857	382.356	213.910	57.232	20.352	1602.707
ABS	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Steel	0.000	221.418	165.890	528.325	88.922	125.129	1129.684
Cast Iron, Wrought Iron	0.000	0.000	7.564	986.174	115.798	251.338	1360.874
Ductile Iron	0.000	0.000	0.001	155.075	23.969	54.935	233.980
Copper	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other(1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other(2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

<<< Choice Changed From >>> --

Table 11.64. Material

	Unknown	2" or less	Over 2" thru 4"	Over 4" thru 8"	Over 8" thru 12"	Over 12"	Total
PVC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PE	0.000	610.544	264.016	142.966	28.534	4.867	1050.927
ABS	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Steel	0.000	226.352	174.020	561.189	91.841	210.365	1263.767
Cast Iron, Wrought Iron	0.000	0.000	8.485	1151.768	131.450	267.269	1558.972
Ductile Iron	0.000	0.000	0.002	183.478	30.916	71.350	285.746
Copper	0.000	0.018	0.000	0.000	0.000	0.000	0.018
Other(1)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other(2)	0.000	0.000	0.000	0.000	0.000	0.000	0.000

◦ Services By Size (EC101ss)

Data Source:

2014 PHMSA Annual Report, compiled from Service and Main Facility WAM Reports

Your Choice (weight: 0) --

Table 11.65. Material

	Unknown	1" or less	Over 1" thru 2"	Over 2" thru 4"	Over 4" thru 8"	Over 8"	Total
PVC	0	0	0	0	0	0	0
PE	0	175130	261100	939	77	5	437251
ABS	0	0	0	0	0	0	0
Steel	0	2966	33602	10481	886	60	47995
Cast Iron, Wrought Iron	0	0	0	0	64	8	72
Ductile Iron	0	0	0	0	240	35	275
Copper	0	3	13225	0	0	0	13228
Other(1)	0	0	16898	0	0	0	16898
Other(2)	0	0	0	0	0	0	0

<<< Choice Changed From >>> --

Table 11.66. Material

	Unknown	1" or less	Over 1" thru 2"	Over 2" thru 4"	Over 4" thru 8"	Over 8"	Total
PVC	0	0	0	0	0	0	0
PE	72	178114	239850	756	52	1	418845
ABS	0	0	0	0	0	0	0
Steel	3	4081	39860	13151	1006	59	58160
Cast Iron, Wrought Iron	0	0	1	0	69	8	78
Ductile Iron	0	0	0	3	321	42	366

Copper	1	73	17370	0	0	0	17444
Other(1)	2	14	21067	1	0	0	21084
Other(2)	29	70	165	1	0	0	265

- Provide Additional Information (EC101b)

Your Choice (weight: 0) --

▪ **Atmospheric Corrosion (CORRAC) (PEOPLES GAS - Entire System)**

- Are repaired atmospheric corrosion leaks increasing? (CORRAC104a)

Data Source:

Cfirst - inside atmospheric corrosion found during ISI LKMS WAM Reports R104/109 Cleared Leaks Bridge & Tunnel - inspection form Residential Exposed Pipe Surveys (2005-2009 are averaged based on 2010-2014 totals) Regulator and Gate Station Leak Surveys Answered by M. Meredith

Your Choice (weight: 0) --

Table 11.67. End of Year

	Leaks Repaired
In 2005	30
In 2006	94
In 2007	77
In 2008	57
In 2009	56
In 2010	54
In 2011	31
In 2012	81
In 2013	27
In 2014	32

<<< Choice Changed From >>> --

Table 11.68. End of Year

	Leaks Repaired
In 2005	12
In 2006	38
In 2007	61
In 2008	45
In 2009	50
In 2010	17
In 2011	0
In 2012	0
In 2013	0
In 2014	0

- Enter sections or facilities of concentrated atmospheric corrosion (CORRAC112)

Data Source:

Inside Atmospheric Corrosion - ISI inspection list from SPFS Engineer B, Martinkus. Outside Atmospheric Corrosion - WAM R45 Service Component Report Bridge and Tunnels - System Integrity Inspection Reports

Your Choice (weight: 0) --

Table 11.69. Section

	Facility Number of Facilities	Description
Inside Atmospheric Corrosion	288012	Inside Service Pipe
Outside Atmospheric Corrosion	280538	Outside Service Riser Pipe
Bridges and Tunnels	32	Bridge and Tunnel Inspections
	0	
	0	

	0	
	0	
	0	
	0	
ConcAtmo_09	0	

<<< Choice Changed From >>> --

Table 11.70. Section

Facility

	Number of Facilities	Description
Inside Atmospheric Corrosion	393000	Inside Service Pipe
Outside Atmospheric Corrosion	200000	Outside Service Riser Pipe
Mains on Bridge	29	Exposed Mains Located on Bridges
Regulator Station	322	Regulator Station Pipe
Mains in Shafts & Tunnels	17	Exposed Mains Located in Shafts & Tunnels
Other	1	Vaulted Sidewalks, Crawl Spaces, Steel Risers on Plastic Services
ConcAtmo_06	0	
ConcAtmo_07	0	
ConcAtmo_08	0	
ConcAtmo_09	0	

- Provide Additional Information (CORRAC112a)

Your Choice (weight: 0) --

- **Atmospheric Corrosion (CORRAC-1a) (Inside Atmospheric Corrosion - Inside Service Pipe)**

- Are repaired atmospheric corrosion leaks increasing? (CORRAC104a)

Data Source:

CFirst - Inside Safety Inspections that indicate existing corrosion and resulting in a leak.

Your Choice (weight: 0) --

Table 11.71. End of Year

	Leaks Repaired
In 2005	14
In 2006	77
In 2007	59
In 2008	36
In 2009	35
In 2010	22
In 2011	26
In 2012	54
In 2013	16
In 2014	22

<<< Choice Changed From >>> --

Table 11.72. End of Year

	Leaks Repaired
In 2005	0
In 2006	200
In 2007	200
In 2008	200
In 2009	200
In 2010	200
In 2011	0
In 2012	0
In 2013	0
In 2014	0

- Is this section predominantly located in business districts or outside business districts (as those are defined for leak survey)? (CORRACCSQ2)

Data Source:

WAM Facility Reports- Majority of pipes within this section are residential.

Your Choice (weight: 0) --Outside Business Districts

<<< Choice Changed From >>> --Within Business Districts

◦ **Atmospheric Corrosion (CORRAC-1a) (Outside Atmospheric Corrosion - Outside Service Riser Pipe)**

- Are repaired atmospheric corrosion leaks increasing? (CORRAC104a)

Data Source:

2005-2009 leak numbers are averaged. 2010-2014 leak numbers from exposed Pipe Inspections that resulted in a leak condition.

Your Choice (weight: 0) --

Table 11.73. End of Year

	Leaks Repaired
In 2005	15
In 2006	15
In 2007	15
In 2008	15
In 2009	15
In 2010	24
In 2011	5
In 2012	27
In 2013	11
In 2014	9

<<< Choice Changed From >>> --

Table 11.74. End of Year

	Leaks Repaired
In 2005	0
In 2006	280
In 2007	280
In 2008	280
In 2009	280
In 2010	280
In 2011	0
In 2012	0
In 2013	0
In 2014	0

- Is this section predominantly located in business districts or outside business districts (as those are defined for leak survey)? (CORRACCSQ2)

Data Source:

WAM Facility Reports

Your Choice (weight: 0) --Outside Business Districts

<<< Choice Changed From >>> --Within Business Districts

◦ **Atmospheric Corrosion (CORRAC-1a) (Bridges and Tunnels - Bridge and Tunnel Inspections)**

- Over the past 15 years, have leaks caused by atmospheric corrosion required repair? (CORRAC104)

Data Source:

Bridge and Tunnel Inspection Forms

Your Choice (weight: 0) --No

<<< Choice Changed From >>> --Yes

- Are the pressure and/or diameter of this section greater than or about the same as the system as a whole? (CORRACCSQ1)

Data Source:

Generally, pipelines that are crossing Bridges/Tunnels are larger size and/or pressure than the rest of the system as a whole. Answered by SME Max Meredith - Engineer Corrosion Control Group

Your Choice (weight: 0.2) --Substantially greater

<<< Choice Changed From >>> --Somewhat greater

- How long would it typically take utility crews to reach this part of the system after receiving notice of a possible failure? (CORRACCSQ3)

Data Source:

Because of the inherent location of this section, reaching the point of the leak would take somewhat more time than a standard leak. Answered by SME Max Meredith - Engineer Corrosion Control Group

Your Choice (weight: 0.025) --Between one (1) and two (2) hours

<<< Choice Changed From >>> --Less than one (1) hour

- What would be the impact on the utility and its customers if this section were to fail? (CORRACCSQ4)

Data Source:

Generally, pipelines in this section are larger diameter and higher pressure than the rest of the system as a whole.

Your Choice (weight: 0.1) --High

<<< Choice Changed From >>> --Moderate

- **External Corrosion (CORRECSTL-UB) (Unprotected, Bare Steel - Entire System)**

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

From PHMSA Annual Reports (2010-2014)

Your Choice (weight: 0) --

Table 11.75. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.000	0	0.000
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

<<< Choice Changed From >>> --

Table 11.76. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.000	0	0.000
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

{HMSA 7100 Reports for Facility data. LKMS Database for 2005-2009 Leaks WAM R104 for Corrosion Leaks Repaired (2010-2014).

Your Choice (weight: 0) --

Table 11.77. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	6957	46	0.007
In 2006	6735	51	0.008
In 2007	6497	76	0.012
In 2008	6198	71	0.011
In 2009	5922	100	0.017
In 2010	6295	34	0.005
In 2011	6250	9	0.001
In 2012	6098	14	0.002
In 2013	5677	37	0.007
In 2014	5227	20	0.004

<<< Choice Changed From >>> --

Table 11.78. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	6957	46	0.007
In 2006	6735	51	0.008
In 2007	6497	76	0.012
In 2008	6198	71	0.011
In 2009	5922	100	0.017
In 2010	6295	48	0.008
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

- Are corrosion leaks system-wide or concentrated in local areas? (EC703)

Data Source:

R104/109 Cleared Leaks Report 2010-2014. Bare Steel Service Leaks divided by District (North=39.5%, Central=34.5%, South=25.9%)

Your Choice (weight: 0) --System-wide

<<< Choice Changed From >>> --Concentrated

■ **External Corrosion (CORRECSTL-UC) (Unprotected, Coated Steel - Entire System)**

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

PHMSA Annual Reports for Miles of Main. WAM R104 for Corrosion Leaks Repaired (2010-2014).

Your Choice (weight: 0) --

Table 11.79. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.488	0	0.000
In 2011	0.224	0	0.000
In 2012	0.185	0	0.000
In 2013	0.341	2	5.865
In 2014	0.338	0	0.000

<<< Choice Changed From >>> --

Table 11.80. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.488	0	0.000
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

Facility Data from PHMSA 7100 LKMS 2005-2009 WAM R104 for Corrosion Leaks Repaired (2010-2014)

Your Choice (weight: 0) --

Table 11.81. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	181	1	0.006
In 2006	182	2	0.011
In 2007	185	1	0.005
In 2008	187	6	0.032
In 2009	186	2	0.011

In 2010	182	0	0.000
In 2011	181	0	0.000
In 2012	183	0	0.000
In 2013	180	3	0.017
In 2014	177	1	0.006

<<< Choice Changed From >>> --

Table 11.82. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	181	1	0.006
In 2006	182	2	0.011
In 2007	185	1	0.005
In 2008	187	6	0.032
In 2009	186	2	0.011
In 2010	182	2	0.011
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

- Are the pressure and/or diameter of this section greater than or about the same as the system as a whole? (ECCSQ1)

Data Source:

Of 177 services, 172 are <= 1.5" diameter. 168 are Low pressure (6"water column) Of the 1784 feet of main, 78% is 4" diameter HP and is located at O'Hare International Airport. The remaining is Low pressure.

Your Choice (weight: 0.1) --Somewhat greater

<<< Choice Changed From >>> --About the same

- Is this section predominantly located in business districts or outside business districts (as those are defined for leak survey)? (ECCSQ2)

Data Source:

78% of mains are at O'Hare International Airport, and are designated as residential, but treated as Business. Answered by M. Meredith.

Your Choice (weight: 0.15) --Within Business Districts

<<< Choice Changed From >>> --Outside Business Districts

- What would be the impact on the utility and its customers if this section were to fail? (ECCSQ4)

Data Source:

The majority of our unprotected, coated steel main runs at app. 55psi and is located at O'Hare International Airport per WAM facility reports.

Your Choice (weight: 0.05) --Moderate

<<< Choice Changed From >>> --Low

■ External Corrosion (CORRECSTL-PC) (Cathodic Protected, Coated Steel - Entire System)

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

PHMSA Annual Reports for Miles of Mains LKMS for Corrosion Leaks Repaired 2005-2009 WAM R104 for Corrosion Leaks Repaired (2010-2014)

Your Choice (weight: 0) --

Table 11.83. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	1212.000	1	0.001
In 2006	1208.000	0	0.000
In 2007	1202.000	6	0.005
In 2008	1198.680	2	0.002
In 2009	1193.370	4	0.003
In 2010	1263.279	6	0.005
In 2011	1170.764	7	0.006
In 2012	1138.190	8	0.007
In 2013	1139.918	8	0.007
In 2014	1129.346	3	0.003

<<< Choice Changed From >>> --

Table 11.84. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	1212.000	1	0.000
In 2006	1208.000	0	0.000
In 2007	1202.000	6	0.005
In 2008	1198.680	2	0.002
In 2009	1193.370	4	0.003
In 2010	1263.279	3	0.002
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- SHRIMP has determined that leaks, failures or damages are increasing. **(see guidance)**.

Do you accept this determination? (EC251ok)

Your Choice (weight: 0) --Accept

<<< Choice Changed From >>> --Do Not Accept

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

Number of Services from PHMSA 7100 submitted reports. Number of corrosion leaks on Corrosion protected steel services from LKMS and R104/109 WAM Reports.

Your Choice (weight: 0) --

Table 11.85. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	44751	15	0.000
In 2006	44031	23	0.001
In 2007	42998	71	0.002
In 2008	41889	41	0.001
In 2009	40960	44	0.001
In 2010	51683	28	0.001
In 2011	51341	44	0.001
In 2012	49411	35	0.001
In 2013	44797	37	0.001

In 2014	42591	27	0.001
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<<< Choice Changed From >>> --

Table 11.86. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	44751	15	0.000
In 2006	44031	23	0.000
In 2007	42998	71	0.002
In 2008	41889	41	0.001
In 2009	40960	44	0.001
In 2010	51683	54	0.001
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

■ **External Corrosion (CORRECOTHR) (Other Metal - Entire System)**

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

From PHMSA Annual Reports (2010-2014)

Your Choice (weight: 0) --

Table 11.87. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.000	0	0.000
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

<<< Choice Changed From >>> --

Table 11.88. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	0.000	0	0.000
In 2006	0.000	0	0.000
In 2007	0.000	0	0.000
In 2008	0.000	0	0.000
In 2009	0.000	0	0.000
In 2010	0.000	0	0.000
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

PHMSA Annual Reports for Number of Services LKMS for leaks repaired 2005-2009 WAM R104 for Corrosion Leaks Repaired on copper services. (2010-2014)

Your Choice (weight: 0) --

Table 11.89. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
--	--------------------	--------------------------	------------------------

In 2005	20476	9	0.000
In 2006	19852	9	0.000
In 2007	19128	7	0.000
In 2008	18097	15	0.001
In 2009	17466	5	0.000
In 2010	17444	7	0.000
In 2011	17100	3	0.000
In 2012	15457	9	0.001
In 2013	13824	10	0.001
In 2014	13228	1	0.000

<<< Choice Changed From >>> --

Table 11.90. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	20476	9	0.000
In 2006	19852	9	0.000
In 2007	19128	7	0.000
In 2008	18097	15	0.000
In 2009	17466	5	0.000
In 2010	17444	9	0.000
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

■ **External Corrosion (CORRECCDWI) (Cast, Ductile, Wrought Iron (8" or smaller) - Entire System)**

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

2005-2009 miles of main are from PHMSA 7100. 2005-2009 corrosion leaks from LKMS database. 2010-2015 Miles of Main from WAM Report R43. Number of leaks from WAM Report R104/109

Your Choice (weight: 0) --

Table 11.91. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	1482.000	34	0.023
In 2006	1448.000	42	0.029
In 2007	1409.000	66	0.047
In 2008	1372.790	61	0.044
In 2009	1360.192	43	0.032
In 2010	1351.624	36	0.027
In 2011	1323.627	23	0.017
In 2012	1249.642	71	0.057
In 2013	1194.919	65	0.054
In 2014	1148.814	52	0.045

<<< Choice Changed From >>> --

Table 11.92. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	1482.000	34	0.023
In 2006	1448.000	42	0.029
In 2007	1409.000	66	0.047
In 2008	1372.790	61	0.044
In 2009	1360.192	43	0.032
In 2010	1343.733	49	0.036
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

2005-2014 number of services are from PHMSA 7100. 2005-2009 number of corrosion leaks are from LKMS. 2010-2014 leaks from WAM R104/109 Leak Cleared Report

Your Choice (weight: 0) --

Table 11.93. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	410	0	0.000
In 2006	400	0	0.000
In 2007	391	0	0.000
In 2008	381	0	0.000
In 2009	366	1	0.003
In 2010	397	0	0.000
In 2011	357	0	0.000
In 2012	326	1	0.003
In 2013	317	0	0.000
In 2014	304	0	0.000

<<< Choice Changed From >>> --

Table 11.94. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	410	0	0.000
In 2006	400	0	0.000
In 2007	391	0	0.000
In 2008	381	0	0.000
In 2009	366	1	0.003
In 2010	394	0	0.000
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

- Does section contain leaks found and being monitored that are suspected to be corrosion related and reflect a corrosion problem? (EC702)

Data Source:

Pending leak reports do not include suspected leak cause.

Your Choice (weight: 0) --No

<<< Choice Changed From >>> --Yes

■ **External Corrosion (CORRECCDWIL) (Cast, Ductile, Wrought Iron (larger than 8") - Entire System)**

- Are repaired corrosion leaks per mile increasing? (EC102)

Data Source:

PHMSA Annual Reports for Miles of Mains (2005-2014). LKMS database for corrosion leaks repaired (2005-2009) WAM R109 for Corrosion Leaks Repaired (2010-2014)

Your Choice (weight: 0) --

Table 11.95. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	541.000	8	0.015
In 2006	530.000	4	0.008
In 2007	520.000	4	0.008

In 2008	510.000	20	0.039
In 2009	510.000	13	0.025
In 2010	500.985	11	0.022
In 2011	497.794	10	0.020
In 2012	481.072	23	0.048
In 2013	457.734	19	0.042
In 2014	446.040	13	0.029

<<< Choice Changed From >>> --

Table 11.96. End of Year

	Miles of Mains	Corrosion Leaks Repaired	Repaired Leaks/mile
In 2005	541.000	8	0.015
In 2006	530.000	4	0.008
In 2007	520.000	4	0.008
In 2008	510.000	20	0.039
In 2009	510.000	13	0.025
In 2010	500.985	10	0.020
In 2011	0.000	0	0.000
In 2012	0.000	0	0.000
In 2013	0.000	0	0.000
In 2014	0.000	0	0.000

- Are repaired corrosion leaks per service increasing? (EC201)

Data Source:

PHMSA Annual Reports for Number of Services. Legacy LKMS Database for Corrosion Leaks Repaired (2005-2009). WAM Report R104/109 Cleared Leak Report.

Your Choice (weight: 0) --

Table 11.97. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	54	0	0.000
In 2006	53	0	0.000
In 2007	53	0	0.000
In 2008	52	0	0.000
In 2009	49	0	0.000
In 2010	50	0	0.000
In 2011	50	0	0.000
In 2012	47	0	0.000
In 2013	44	0	0.000
In 2014	43	0	0.000

<<< Choice Changed From >>> --

Table 11.98. End of Year

	Number of Services	Corrosion Leaks Repaired	Repaired Leaks/service
In 2005	54	0	0.000
In 2006	53	0	0.000
In 2007	53	0	0.000
In 2008	52	0	0.000
In 2009	49	0	0.000
In 2010	50	0	0.000
In 2011	0	0	0.000
In 2012	0	0	0.000
In 2013	0	0	0.000
In 2014	0	0	0.000

■ **Internal Corrosion (CORRIC) (PEOPLES GAS - Entire System)**

- Is this section predominantly located in business districts or outside business districts (as those are defined for leak survey)? (CORRICCSQ2)

Data Source:

WAM Facility Reports

Your Choice (weight: 0) --Outside Business Districts

<<< Choice Changed From >>> --Within Business Districts

Equipment Malfunction Threat

- **Equipment Malfunction (EQIP) (PEOPLES GAS - Entire System)**

- Are leaks occurring or do inspections indicate potential equipment malfunctions? (EQ101a)

Data Source:

Per WAM R104/109 Leak Reports and vault inspection results. Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 3) --

Valves

Heaters

Other

<<< Choice Changed From >>> --

Valves

Other

- Provide Additional Information (EQ105)

Your Choice (weight: 0) --

- **Other Equipment Experiencing Failure (EQ-FailO) (Failing Equipment - Other)**

- What equipment is malfunctioning? (EQ101b)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --

Table 11.99. Equipment

	Make	Model	Size(s)	Description
Gate Stations				All Gate Stations
Medium Pressure Vaults				High Pressure to Medium Pressure Vaults
Low Pressure Vaults				Medium Pressure to Low Pressure Vaults
High Pressure to High Pressure Stations				High Pressure to High Pressure Station

<<< Choice Changed From >>> --

Table 11.100. Equipment

	Make	Model	Size(s)	Description
Other	Various	Various	Various	Valve Stem Leaks, Grease Fitting Leaks
Equip Malfunction on Main Pipe	Various	Various	Various	Main Pipe
Equip Malfunction on Service Pipe	Various	Various	Various	Service Pipe

Equipment Failure on Main Pipe in Downtown District	Various	Various	Various	Downtown Mains
Equipment Failure on Service Pipe in Downtown Business District	Various	Various	Various	Downtown Services
Equip Failure on Main Pipe Inside Regulator Vault	Various	Various	Various	Mains in Regulator Vault
Equip Failure on HP CP Steel Main & Services	Various	Various	Various	High Pressure CP Mains & Services

- Provide Additional Information (EQ101d)

Your Choice (weight: 0) --

- **Specific Other Equipment Experiencing Failure (EQ-FailO-1a) (Gate Stations - All Gate Stations)**

- What is the inspection/maintenance frequency for this type of equipment? (EQ301)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --Annual

<<< Choice Changed From >>> --Bi-Annual (Every other year) or Greater

- Does the failing element of the equipment cause system pressure to exceed the MAOP? (EQ306)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Yes

<<< Choice Changed From >>> --No

- What is the likelihood that a failure of this equipment will result in a Grade 1 leak? (EQ308)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --High

<<< Choice Changed From >>> --Low

- Is the size/capacity of the equipment substantially greater or lesser than other equipment in the system as a whole? (EQCSQ1)

Data Source:

Gate Station Piping is substantially larger size and pressure than the rest of the system as a whole.
Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.2) --Substantially greater

<<< Choice Changed From >>> --About the same

- What would be the impact on the utility and its customers if this equipment were to fail? (EQCSQ4)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.1) --High

<<< Choice Changed From >>> --Low

◦ **Specific Other Equipment Experiencing Failure (EQ-FailO-1a) (Medium Pressure Vaults - High Pressure to Medium Pressure Vaults)**

- Is the equipment malfunctioning due to failing seals, gaskets, o-rings, packing, etc.? (EQ302)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --No

<<< Choice Changed From >>> --Yes

- Does the failing element of the equipment cause system pressure to exceed the MAOP? (EQ306)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Yes

<<< Choice Changed From >>> --No

- What is the likelihood of this piece of equipment failing? (EQ307)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Low

<<< Choice Changed From >>> --Medium

- What is the likelihood that a failure of this equipment will result in a Grade 1 leak? (EQ308)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --High

<<< Choice Changed From >>> --Low

- Is the size/capacity of the equipment substantially greater or lesser than other equipment in the system as a whole? (EQCSQ1)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.1) --Somewhat greater

<<< Choice Changed From >>> --About the same

◦ **Specific Other Equipment Experiencing Failure (EQ-FailO-1a) (Low Pressure Vaults - Medium Pressure to Low Pressure Vaults)**

- What is the inspection/maintenance frequency for this type of equipment? (EQ301)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --Annual

<<< Choice Changed From >>> --Bi-Annual (Every other year) or Greater

- Is the equipment malfunctioning due to failing seals, gaskets, o-rings, packing, etc.? (EQ302)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --No

<<< Choice Changed From >>> --Yes

- Does the failing element of the equipment cause system pressure to exceed the MAOP? (EQ306)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Yes

<<< Choice Changed From >>> --No

- Does the equipment primarily affect the system located in the business district? (EQCSQ2)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.15) --Within Business Districts

<<< Choice Changed From >>> --Outside Business Districts

- What would be the impact on the utility and its customers if this equipment were to fail? (EQCSQ4)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.05) --Moderate

<<< Choice Changed From >>> --Low

◦ **Specific Other Equipment Experiencing Failure (EQ-FailO-1a) (High Pressure to High Pressure Stations - High Pressure to High Pressure Station)**

- What is the inspection/maintenance frequency for this type of equipment? (EQ301)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --Annual

<<< Choice Changed From >>> --Semi-Annual (Twice a year)

- Is the equipment malfunctioning due to failing seals, gaskets, o-rings, packing, etc.? (EQ302)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --No

<<< Choice Changed From >>> --Yes

- Does the failing element of the equipment cause system pressure to exceed the MAOP? (EQ306)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Yes

<<< Choice Changed From >>> --No

- What is the likelihood of this piece of equipment failing? (EQ307)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --Low

<<< Choice Changed From >>> --Medium

- What is the likelihood that a failure of this equipment will result in a Grade 1 leak? (EQ308)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --High

<<< Choice Changed From >>> --Low

- Is the size/capacity of the equipment substantially greater or lesser than other equipment in the system as a whole? (EQCSQ1)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.1) --Somewhat greater

<<< Choice Changed From >>> --About the same

- Does the equipment primarily affect the system located in the business district? (EQCSQ2)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --Outside Business Districts

<<< Choice Changed From >>> --Within Business Districts

- What would be the impact on the utility and its customers if this equipment were to fail? (EQCSQ4)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0.1) --High

<<< Choice Changed From >>> --Moderate

■ Valves Experiencing Failure (EQ-FailV) (Failing Equipment - Valves)

- What equipment is malfunctioning? (EQ101b)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --

Table 11.101. Equipment

	Make	Model	Size(s)	Description
Service Valves				All Service Valves
Distribution Valves				Distribution Valves Not Located in Basins
Network Valves				All Network Valves
Remote Oper Valves				All Remote Op Valves
Kerotest Valve	Kerotest	Prior to Mid 1980's		Kerotest Valve
Security Valves				Slam Shut Security Valves
Gas Operations Distribution Valves				Distribution Valves Located Inside Valve Basins

<<< Choice Changed From >>> --

Table 11.102. Equipment

	Make	Model	Size(s)	Description
Service Valves	All	All	All	All Service Valves
Distribution Valves	All	All	All	All Distribution Valves
Network Valves	All	All	All	All Network Valves
Remote Oper Valves	All	All	All	All Remote Op Valves
Kerotest Valve	Kerotest	Kerotest	All	Kerotest Valve
Specific_05				

- Provide Additional Information (EQ101d)

Your Choice (weight: 0) --

- **Specific Valves Experiencing Failure (EQ-FailV-1a) (Network Valves - All Network Valves)**

- What is the likelihood that a failure of this equipment will result in a Grade 1 leak? (EQ310)

Data Source:

These valves are located within basins, and PGL Leak Classification states all confined space leaks are Class 1. Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 1) --High

<<< Choice Changed From >>> --Low

- Is the size/capacity of the equipment substantially greater or lesser than other equipment in the system as a whole? (EQCSQ1)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --About the same

<<< Choice Changed From >>> --Somewhat greater

- What would be the impact on the utility and its customers if this equipment were to fail? (EQCSQ4)

Data Source:

Answered by SME Alonzo Foster, Supervisory Engineer Gas Operations

Your Choice (weight: 0) --Low

<<< Choice Changed From >>> --Moderate

- **Specific Valves Experiencing Failure (EQ-FailV-1a) (Remote Oper Valves - All Remote Op Valves)**

- What is the inspection/maintenance frequency for this type of equipment? (EQ302)

Data Source:

O&M Plan (Exhibit XII) Gas Operations Section Manual, Chapter 5, Section 5

Your Choice (weight: 0) --Semi-Annual (Twice a year)